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- (a) providing a first plurality of antiligands immobilized on a solid support at positionally distinct and spatially encoded locations thereon to provide a first array, wherein the plurality of antiligands comprises a first antiligand capable of binding specifically to a first ligand;
- (b) contacting the array with a sample containing or suspected of containing the first ligand, wherein the first ligand is linked through a linker to a first semiconductor nanocrystal before, during or after the contacting, under conditions in which the first ligand, if present, binds specifically to the first antiligand to form a first complex;
- (c) optionally, removing unbound ligand from the array; and
- (d) identifying the location of the first complex by detecting and, optionally, quantifying the presence in the first complex of the first semiconductor nanocrystal, whereby detection of the first semiconductor nanocrystal and the location at which it binds indicates the presence and the identity of the first ligand.

3. (Twice amended) The method of claim 1, wherein the sample contains a second ligand linked to a second semiconductor nanocrystal which is optionally detectably distinct from the first semiconductor nanocrystal, wherein the second ligand is capable of binding specifically to a second immobilized antiligand to form a second complex; and

identifying comprises determining which location or locations of the array include the first complex, the second complex or the first and second complexes by detecting and, optionally, quantifying simultaneously or sequentially the presence in the first and second complexes of the first and second semiconductor nanocrystals, whereby the location or locations at which the first and second semiconductor nanocrystals bind indicates the identity of the first and second ligand, and the first and second ligands are optionally distinguished according to a signal that is distinct for each of the first and second semiconductor nanocrystals.

19. (Twice amended) The method of claim 16, wherein

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the sample contains a second ligand linked to a second semiconductor nanocrystal that is capable of binding specifically to a second immobilized antiligand to form a second complex and optionally detectably distinct from the first semiconductor nanocrystal; and

identifying comprises determining which location or locations of the array include the first complex, the second complex or the first and second complexes by detecting and, optionally, quantifying simultaneously or sequentially the presence in the first and second complexes of the first and second semiconductor nanocrystals, whereby the location or locations at which the first and second semiconductor nanocrystals bind indicates the identity of the first and second ligand, and binding of the first and second ligands is optionally distinguished according to a signal that is distinct for each of the first and second semiconductor nanocrystals.

21. (Twice amended) The method of claim 20, wherein

the sample contains a second ligand linked to a second semiconductor nanocrystal that is capable of binding specifically to a second immobilized antiligand to form a second complex and optionally detectably distinct from the first semiconductor nanocrystal; and

identifying comprises determining which location or locations of the array include the first complex, the second complex or the first and second complexes by detecting and, optionally, quantifying simultaneously or sequentially the presence in the first and second complexes of the first and second semiconductor nanocrystals, whereby the location or locations at which the first and second semiconductor nanocrystals bind indicates the identity of the first and second ligand, and binding of the first and second ligands is optionally distinguished according to a signal that is distinct for each of the first and second semiconductor nanocrystals.

40. (Twice amended) An analytical method, comprising:

(a) providing a first plurality of antiligands immobilized on a solid support at positionally distinct and spatially encoded locations thereon to provide an array, wherein the plurality comprises a first antiligand that is a binding partner of a first ligand;

(b) contacting the first array with a sample containing or suspected of containing the first ligand, whereby the first ligand, if present, and the first antiligand interact to form a first complex;

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- (c) labeling the first ligand in the first complex with a first semiconductor nanocrystal; and
- (d) identifying which location of the array includes the first complex by detecting the presence therein of the first semiconductor nanocrystal, whereby detection of the first semiconductor nanocrystal and the location at which it binds indicates the presence and the identity of the first ligand.

41. (Twice amended) The method of claim 40, wherein:
the first plurality of antiligands comprises a second antiligand that is a binding partner of a second ligand;
the sample contains or is suspected of containing the second ligand, whereby the second ligand, if present, and the second antiligand interact to form a second complex;
step (c) comprises labeling the second ligand in the second complex with a second semiconductor nanocrystal that is optionally detectably distinct from the first semiconductor nanocrystal; and
step (d) comprises determining which location or locations of the array include the first complex, the second complex or both the first and second complexes by detecting the presence therein of the first and second semiconductor nanocrystals, whereby the location or locations at which the first and second semiconductor nanocrystals bind indicates the identity of the first and second ligand, and binding of the first and second ligands is optionally distinguished according to a signal that is distinct for each of the first and second semiconductor nanocrystals.

REMARKS

I. Status of the Claims

Claims 1-10, 13, 16-24 and 27-43 are pending. Upon entry of this amendment, claims 1, 3, 19, 21 and 40 are amended without prejudice or disclaimer. Applicants retain the right to prosecute the unamended claims in this or another application.